RESEARCH

Characteristics of substance use disorders in compulsory and voluntary treatment practices

Zorunlu ve gönüllü tedavi uygulamalarında madde kullanım bozukluklarının özellikleri

Mustafa Kurt[1] (ID), Ali Taşdemir[2] (ID)

[1]Karadeniz Technical University, Trabzon, Türkiye
[2]Adana Dr. Ekrem Tok Mental Health and Illness Hospital, Adana, Türkiye

Abstract

Purpose: The aim of the study is to compare and determine addiction tendencies in voluntary and probation (DS) applications in Adana province located in the Mediterranean regionof Türkiye.

Materials and Methods: The study was planned as prospective and cross-sectional. 1007 people who applied to the alcohol and substance treatment center within a 1-month period and were examined by a mental health specialist and diagnosed with substance use disorder were included in the study.

Results: 45% of those who applied to the treatment center were through probation. The sample taken is similar to the 2022 data of the Turkish Drug Addiction Monitoring Center in terms of age and gender. Opiates were the most frequently used substance in voluntary applications, and cannabis was the most frequently used substance in DS applications. 38.5% of the participants had a criminal prison history. Opiates were the substance that affected social, professional and family life the most, while cannabis was the least. Male gender, being single, no work history, living in cities, and having a family history of alcohol and substance use were risk factors that decreased the age of first substance use.

Conclusion: Substance use disorder is an important problem affecting society in terms of many factors such as familial, social, occupational and judicial, and shows the importance of knowing the sociodemographic and clinical characteristics of individuals in the implementation of protective measures.

Keywords: Probation, sociodemographic data, substance use disorder

Öz

Amaç: Çalışmanın amacı, Türkiye'nin Akdeniz bölgesinde yer alan Adana ilinin gönüllü ve denetimli serbestlik (DS) başvurularında bağımlılık eğilimlerinin karşılaştırılarak tespit edilmesidir.

Gereç ve Yöntem: Çalışma prospektif ve kesitsel olarak planlandı. 1 aylık süre içinde alkol ve madde tedavi merkezine başvuran, ruh sağlığı uzmanı tarafından muayene edilip madde kullanım bozukluğu tanısı konan 1007 kişi çalışmaya dahil edildi.

Bulgular: Tedavi merkezine başvuranların %45'i denetimli serbestlik uygulaması aracılığıyla gerçekleşti. Alınan örneklem Türkiye uyuşturucu bağımlılığı izleme merkezi 2022 verilerine yaş ve cinsiyet açısından benzemektedir. Gönüllü başvurularda opiyat, DS başvurularında kannabis en sık kullanılan maddeydi. Katılımcıların %38,5'nin adli cezaevi öyküsü mevcuttu. Sosyal, mesleki, aile hayatını en çok etkileyen madde opiyat, en az etkileyen madde kannabis olarak bulundu. Erkek cinsiyet, bekar olmak, çalışma öyküsünün yokluğu, kentlerde yaşamak, ailede alkol madde kullanım öyküsü olmasının ilk madde kullanım yaşını düşüren risk faktörleri olduğu sonucuna ulaşıldı.

Sonuç: Çalışmamız madde kullanım bozukluğunun ailevi, sosyal, mesleki ve adli gibi birçok faktör açısından toplumu etkileyen önemli bir sorun olduğunu ve koruyucu tedbirlerin uygulanmasında kişilerin sosyodemografik ve klinik özelliklerinin bilinmesi önemini göstermektedir.

Anahtar kelimeler: Denetimli serbestlik, madde kullanım bozukluğu, sosyodemografik veri

INTRODUCTION

Substance use disorder (SUD) is considered a public healthcare concern globally. The United Nations Office on Drugs and Crime World Drug Report 2020 revealed that 35.6 million people globally suffered from SUD in 2018, and only 1 out of 8 people received treatment. Cannabis was the most widely used substance, with approximately 192 million users. Over the last 2 decades, substance use rates have increased more rapidly in developing countries compared to developed countries, with estimated rates of 28% and 7%, respectively. This increase in the rate of substance use in developing countries, including Turkey, is considered to be a reflection of the rising youth population in these countries. In SUD, the substance used varies by region within a country[1]. It is well-known that cannabis and opiates are some of the widely used narcotics in Turkey. Moreover, in developing countries such as Turkey, use of drugs, including synthetic cannabis, amphetamine, and methamphetamine is also increasing[2,3].

Turkey is considered a transit zone for illicit drug trafficking between Europe and Asia, with its significant youth population making it particularly vulnerable. The rising prevalence of SUD is a major concern in the country[4]. The Turkish Monitoring Centre for Drugs and Drug Addiction (TUBIM) reported lifetime prevalence rates of tobacco, alcohol, and substance use in Turkey to be 47%, 22.1%, and 3%, respectively[5]. After reviewing the distribution of patients who received treatment in 2022 by the types of substances they were treated for, TUBIM reported that 37.4% of the patients applied for opiates, 37.8% for methamphetamine, and 17% for cannabis[6]. Causative factors of substance use as well as sociodemographic and clinical characteristics of patients are considered important for early diagnosis and reduction of future risk for SUD[7].

Forensic issues associated with substance use and addiction, overcrowding in prisons, inadequate physical facilities, high numbers of individuals with short-term sentences, and a better understanding of rehabilitating patients in the community have paved the way for the implementation of the probation system[8]. The probation (DS) program has been in use in Turkey since 2005, and it involves serving a court sentence, either a sanction or measure applied to the crime, outside the penal institution, i.e., in the community[9]. Probation is a community-based practice including services, programs, and resources necessary for integration of convicted individuals into communal life. Probation is a community-based practice that includes services, programs, and resources necessary to integrate convicted individuals into communal life. Furthermore, it contributes to the protection of society through the prevention of recidivism, follow-up of prisoners released from prison, rehabilitation of drug addicts, and elimination of the harm suffered by victims[10].

Individuals to be monitored by the constitutional probation system are defined in Article 191 of the Turkish Penal Code No. 5237 as follows: "An individual who buys, accepts, or possesses drugs or stimulants for personal use shall be punished with imprisonment from 1 to 2 years. An individual who cultivates plants that produce the effects of narcotic drugs or stimulants for one's own use shall be punished pursuant to the provisions of this paragraph. An individual who uses drugs or stimulants shall be sentenced to treatment and probation measures" [11]. In Turkey, probation is jointly executed by the Ministries of Justice and Health. Considering the scope of the treatment and probation measure decisions issued by the Public Prosecutor's Office for individuals who have used drugs or stimulants, the convicted individuals are referred to the relevant healthcare institution for the necessary treatment. According to the TUBIM data, the number of outpatient probation applications in treatment centers in 2022 was 113,981[6].

Data on the prevalence and characteristics of substance use can contribute to the knowledge base on addiction trends in a country, region, or city; help with taking measures against substance use; formulate treatment and rehabilitation policies; and identify the needs of patients. The prevalence of substance use is a concern from various perspectives, including health, education, economy, and national security. To the best of our knowledge, the present study is the first of its kind, investigating the characteristics of addiction in the province of Adana. It is also the first study in Turkey investigating the differences between a group that voluntarily applied to the addiction center and a group referred by the judicial authorities, considering parameters such as sociodemographics, substance use characteristics, and frequency of legal problems. The study hypothesized differences in substance type between probation and volunteer groups, explored the relationship between probation group and age of

hospital admission and prison history, examined how clinical features might differ by substance type, and considered how sociodemographic factors could affect the age of first substance use.

MATERIALS AND METHODS

Sample

The Adana Dr. Ekrem Tok Mental and Nervous Diseases Hospital is a regional psychiatric hospital with a 545-bed capacity, serving Adana and 16 surrounding provinces. It features a 90-bed clinic specially dedicated to treating addiction. The addiction recovery center has been accepting patients since 2011 and treats approximately 25,000 outpatients and 2,000 inpatients annually. The present study was designed as prospective and cross-sectional research and conducted with outpatients who either voluntarily applied for treatment or were referred on probation by the judicial authorities to the adult Alcohol and Substance Treatment Center (AMATEM) of Adana Dr. Ekrem Tok Mental Health and Hospital between 01-01-2023 and 02-01-2023.

The study participants were diagnosed by the psychiatrist in charge of the clinic with SUD based on the criteria stipulated in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (i.e., meeting at least two criteria provided in DSM-5). Pursuant to the inclusion criteria, individuals aged 18–65 years who were at least literate in regard to their education level, did not use substances or have ongoing effects of substance use at the time of presentation, and had a diagnosis of SUD were included in the study. Those with intellectual disability or cognitive impairment at admission were excluded from the study. Participants were classified as single and multiple substance users when they met the DSM-5 diagnostic criteria for alcohol or only one of the substances in the DSM-5 and when they met the diagnostic criteria for at least two substances, respectively.

Out of the 2,261 individuals who presented to the hospital during the 1-month period, 1058 individuals diagnosed with SUD agreed to participate. 51 individuals were excluded because they had ongoing effects of substance use. 1,007 patients met the inclusion criteria and provided their written informed consent to be included in the study. The study's power analysis was performed with the G Power 3.1.9.2 program. With a medium effect size (0.5), 95% power, and a margin of error 0.05, it was calculated

that at least 105 participants in both groups and 210 participants in total were required. Therefore, a sample of 1007 participants was considered to be adequately powered.

Procedure

The sociodemographic characteristics of the participants were compared in three different ways. In the first, they were grouped as volunteer and probation group according to their application methods. In the second, they were classified according to the SUD diagnoses made by the psychiatrist according to DSM-V. In the third, the participants were evaluated by taking into account their age of first substance use.

The required approval for the study was obtained from the Clinical Research Ethics Committee of Adana City Training and Research Hospital with decision number 2302 dated 15.12.2022. All the procedures in the present study were performed pursuant to the World Medical Association Declaration of Helsinki–Ethical Principles for Medical Research Involving Human Subjects and ethical standards. All the participants were included in the study upon collection of the informed written consent forms.

Measures

Participants were asked to complete a sociodemographic and clinical data form developed by the authors specifically for the present study. The form intended to collect study data, including social and clinical status such as sex, marital status, socioeconomic status, education level, employment history, place of residence, reason for visiting the clinic, age at first substance use, history of prison admission and hospitalization, and family history. The income level was evaluated based on the 8500 TL minimum wage applied in Turkey in 2023.

Statistical analysis

The Statistical Package for Social Sciences Version 25.00 statistical software was used for the statistical analysis in the present study. Shapiro–Wilk test was used to test the normal distribution hypothesis for the intergroup analysis of continuous variables. The comparison of age and age of first substance use between the volunteer group and the probation group that did not conform to normal distribution was made using the Mann-Whitney U Test. The chi-

square test was used to analyze the differences between the sociodemographic characteristics between the volunteer group and the probation group. The chi-square test was used to compare sociodemographic characteristics according to SUD diagnoses. The Kruskal-Wallis test was used to compare age and age of first substance use according to SUD diagnoses. The Mann-Whitney U test was used for independent groups to compare mean values between two independent groups according to age of first substance use, and the Kruskal-Wallis test was used for comparisons between three or more groups. Descriptive characteristics were expressed as percentage, frequency, mean and standard deviation. The significance level was taken as $p < 0.05$.

RESULTS

The mean age of 1,007 participants included in the study was 33.00 ± 9.54 years. Moreover, the rate of participants who visited the clinic voluntarily and those referred to in the scope of probation was 55% and 45%, respectively; 92.8% of the participants were men, and 7.2% were women. The mean age at first substance use was 20.58 ± 7.24 years. Use of opiates (26.8%), multiple substances (simultaneous use of multiple substances, 25.5%), cannabis (19.8%), and methamphetamine (16.1%) was ranked the first among the reasons for admission associated with SUD. Moreover, 38.5% of the patients had a history of imprisonment, and 12.4% had a family history of alcohol consumption. The most frequent substances used in the probation and volunteer groups were cannabis and opiates, respectively. About 51.4% of the volunteering patients had a history of hospitalization in AMATEM (Table 1).

A comparison of sociodemographic and clinical characteristics of the participants in both groups revealed that the two groups had similar characteristics regarding sex and education level. For the sociodemographic characteristics, significant intergroup differences by age, marital status, employment status, income level, history of receiving social assistance, and place of residence ($p < 0.001$, $p < 0.002$, $p < 0.001$, $p < 0.001$, $p < 0.001$, $p < 0.001$, $p < 0.001$, respectively) were observed. The age at first substance use was similar between the two groups. However, significant intergroup differences in regard to the reason for admission to the clinic, history of previous hospitalization in AMATEM, and alcohol and substance use in the family ($p < 0.001$, $p < 0.001$, $p < 0.049$, respectively) were observed (Table 1).

The relationship with clinical characteristics was analyzed based on the substance, which was the reason for admission. There was no difference observed in regard to sex, education level, place of residence, previous history of imprisonment, and family history of alcohol and substance abuse. However, there were significant differences in terms of age, age group, age at the onset of substance use, marital status, employment and income status, receipt of social assistance, and the previous history of AMATEM hospitalization (Table 2).

When the relationship between the age at first substance use and variables was examined, it was observed that men and single individuals started using substances at an earlier age. The higher the level of education, the later the age at first substance use. The age at first substance use was lower in individuals who had no history of employment but had a history of imprisonment and alcohol consumption. Furthermore, living in rural areas was associated with later age at first substance use (Table 3).

Tablo 1. Sociodemographic characteristics of participants and comparison of groups

Variables		Probation group		Volunteer group		Total		
		n	%	n	%	n	%	p
Sex	Men	419	92.5	515	93	934	92.8	0.777
	Women	34	7,5	39	7	73	7.2	
Age(mean, SD)		31.27	8.92	34.41	9.80	33.00	9.54	<0.001
Age group	18-29	211	46.6	180	32.5	391	38.8	<0.001
	30-44	202	44.6	297	53.6	499	49.6	
	45-59	35	7.7	63	11.4	98	9.7	

	>60	5	1.1	14	2.5	19	1.9	
Marital status	Married	188	41.5	235	42.4	423	42	0.002
	Single	234	51.7	246	44.4	480	47.7	
	Divorced	31	6.8	73	13.2	124	10.3	
Education level	No education	14	3.1	8	1.4	22	2.2	0.345
	Primary school	266	58.7	327	59.0	593	58.9	
	High school	152	33.6	190	34.3	342	33.9	
	University	21	4.6	29	5.2	50	5	
Employment status	Yes	299	56.6	252	45.5	551	54.7	<0.001
	No	154	43.4	302	54.5	456	45.3	
Income level	Income below minimum wage	202	44.6	323	58.3	525	52.2	<0.001
	Income of minimum wage	137	30.2	125	22.6	262	26	
	Above minimum wage	114	25.2	106	19.1	220	21.8	
Place of residence	Adana	429	94.7	431	77.8	860	85.1	<0.001
	Other city	24	5.3	123	22.2	147	14.6	
Receipt of social assistance	Yes	38	8.4	95	17.1	133	13.2	<0.001
	No	415	91.6	459	82.9	874	86.8	
Age at the onset of substance use (mean, SD)		20.37	7.23	20.76	7.25	20.58	7.24	0.390
Reason for admission to the clinic	Alcohol	1	0.2	18	3.2	19	1.9	<0.001
	Opiates	22	4.9	248	44.8	270	26.8	
	Cannabis	185	40.8	14	2.5	199	19.8	
	Methamphetamine	78	17.3	84	15.2	162	16.1	
	Synthetic cannabis	44	9.7	4	0.7	48	4.8	
	Multiple substance	89	19.6	168	30.3	257	25.5	
	Other	34	7.5	18	3.2	52	5.2	
History of imprisonment	Yes	173	38.2	215	38.8	388	38.5	0.841
	No	280	61.8	339	61.2	619	61.5	
History of hospitalization	Yes	52	11.5	269	48.6	321	31.9	<0.001
	No	401	88.5	285	51.4	686	68.1	
Family history	Yes	46	10.2	79	14.3	125	12.4	0.049
	No	407	89.8	475	85.7	882	87.6	
Total		453	45	554	55	1007	100	

p<0.05, SD: Standard Deviation , Chi Square Test, Mann-Whitney U Test

Tablo 2. Comparison of clinical features according to the substance that reason for admission to the clinic

Variables	Alcohol	Opiates	Cannabis	Methamphetamine	Synthetic cannabis	Multiple substance	Other	p
Sex (n,%)								0.129
Men	18(94.7%)	254(94.1%)	191(96%)	143(88.3%)	43(89.6%)	238(92.6%)	47(94.6%)	
Women	1(5.3%)	16(5.9%)	8(4%)	19(11.7%)	5(10.4%)	19(7.4%)	5(5.4%)	
Age (mean,SD)	42.47±15.68	37.69±9.9	32.41±9.17	30.21±8.23	28.89±8.36	31.05±7.86	29.24±7.22	<0.001
Age group (n,%)								<0.001
18-29	6(31.6%)	52(19.3%)	84(42.2%)	83(51.2%)	30(62.5%)	109(42.4%)	27(51.9%)	
30-44	5(26.3%)	156(57.8%)	97(48.7%)	68(42%)	14(29.2%)	135(52.5%)	24(41.6%)	
45-59	5(26.3%)	51(18.9%)	15(7.5%)	9(5.6%)	4(8.3%)	13(5.1%)	1(1.9%)	
>60	3(15.8%)	11(4.1%)	3(1.5%)	2(1.2%)	0(0%)	0(0%)	0(0%)	
Marital status (n,%)								0.004
Married	9(47.4%)	112(41.5%)	89(44.7%)	71(43.8%)	18(37.5%)	105(40.9%)	19(36.5%)	
Single	8(42.1%)	113(41.9%)	102(51.3%)	71(43.8%)	27(56.3%)	128(49.8%)	31(56.9%)	
Divorced	2(10.5%)	45(16.7%)	8(4%)	20(12.4%)	3(6.2%)	24(9.3%)	2(3.9%)	
Education level (n,%)								0.396
No education	0(0%)	6(2.2%)	6(3%)	4(2.5%)	2(4.2%)	3(1.2%)	1(1.9%)	
Primary school	9(47.4%)	148(54.8%)	118(59.3%)	94(58%)	28(58.3%)	163(63.4%)	33(63.5%)	
High school	6(31.5%)	103(38.2%)	65(32.7%)	57(35.2%)	15(31.3%)	81(31.5%)	15(28.8%)	
University	4(21.1%)	13(4.8%)	10(5%)	7(4.3%)	3(6.3%)	10(3.9%)	3(5.8%)	
Employment status (n,%)								<0.001
Yes	9(47.4%)	138(51.1%)	135(67.8%)	78(48.1%)	31(64.6%)	126(49%)	34(65.4%)	
No	10(52.6%)	132(48.9%)	64(32.2%)	84(51.9%)	17(35.4%)	131(51%)	18(34.6%)	
Income level (n,%)								0.002
Income below minimum wage	7(36.8%)	155(57.4%)	76(38.2%)	92(56.8%)	21(43.8%)	145(56.4%)	29(56.8%)	
Income of minimum wage	4(21.1%)	63(23.3%)	72(36.2%)	34(21%)	14(29.2%)	61(23.7%)	14(26.9%)	
Above minimum wage	8(42.1%)	52(19.3%)	51(35.6%)	36(22.2%)	13(27%)	51(19.9%)	9(17.3%)	
Place of residence (n,%)								0.963
Adana	19(100%)	265(98.1%)	196(98.5%)	158(97.5%)	47(97.9%)	250(97.3%)	51(98.1%)	
Other	0(0%)	5(1.9%)	3(1.5%)	4(2.5%)	1(2.1%)	7(2.7%)	1(1.9%)	
Receipt of social assistance (n,%)								0.005
Yes	1(5.3%)	54(20%)	16(8%)	19(11.7%)	4(8.3%)	31(12.1%)	8(15.4%)	
No	18(94.7%)	216(80%)	183(92%)	143(88.3%)	44(91.7%)	226(87.9%)	44(84.6%)	
History of imprisonment n,%)								0.376
Yes	6(%31.6%)	106(39.3%)	78(39.2%)	52(32.1%)	18(37.5%)	11(43.2%)	17(32.7%)	
No	13(68.4%)	164(60.7%)	121(60.8%)	110(67.9%)	30(62.5%)	146(56.8%)	35(67.3%)	
History of hospitalization (n,%)								<0.001
Yes	4(21.1%)	158(58.5%)	12(6%)	37(22.8%)	4(8.3%)	103(40.1%)	3(5.8%)	
No	15(78.9%)	112(41.5%)	187(94%)	125(77.2%)	44(91.7%)	154(50.9%)	49(94.2%)	
Family history (n,%)								0.114
Yes	6(31.6%)	32(11.9%)	21(10.6%)	17(10.5%)	4(8.3%)	39(15.2%)	6(11.5%)	
No	13(68.4%)	238(88.1%)	178(89.4%)	145(89.5%)	44(91.7%)	218(84.8%)	46(88.5%)	
Age at first substance use (mean,SD)	21.52±9.53	21.62±7.65	20.58±7.08	21.40±7.85	20.02±7.24	18.73±5.96	22.01±7.05	<0.001

p<0.05, SD: Standard Deviation , Chi Square Test, Kruskal Wallis Test

Tablo 3. Comparison of clinical features according to age of onset of substance use

Variable		Age at first substance use	
	n	mean,SD	p
Sex			
Men	934	20.49±7.24	0.043
Women	73	21.82±7.13	
Marital status			
Married	423	22.17±8.33	
Single	480	18.92±5.58	<0.001
Divorced	104	21.77±7.61	
Education level			
No education	22	23.77±10.45	
Primary school	593	20.31±7.35	0.007
High school	342	20.50±6.65	
University	50	22.94±7.59	
Employment status			
Yes	551	21.17±7.7	0.018
No	456	19.87±6.48	
Income level			
Income below minimum wage	525	20.11±6.83	0.123
Income of minimum wage	262	20.62±7.05	
Above minimum wage	220	21.66±8.27	
Place of residence			
Adana	986	20.49±7.17	0.007
Other	21	25.00±9.01	
Receipt of social assistance			
Yes	133	22.25±8.31	0.024
No	874	20.33±7.03	
History of imprisonment			
Yes	388	19.39±7.04	<0.001
No	619	21.33±7.27	
History of hospitalization			
Yes	321	20.02±6.48	0.338
No	686	20.84±7.56	
Family history			
Yes	125	18.68±5.56	0,003
No	882	20.85±7.41	

p<0.05, SD: Standard Deviation , Kruskal Wallis Test, Mann-Whitney U Test

DISCUSSION

The most important finding of the present study shows that almost one out of every two individuals applied to an addiction recovery center for the treatment of SUD through judicial channels. TUBIM 2023 report indicated that 113,981 out of 302,911 outpatient applications that applied to treatment centers in 2022 were referred within the scope of probation[6]. A Saudi Arabian study reported that half of the substance users applied for treatment voluntarily, whereas the rest were referred for treatment by their families or the state[12]. Bilici et al. reported that 50.8% of the presentations were associated with probation[13]. Furthermore, it was reported that 26% of patients were admitted to hospitals by health, education, and social services, and 16% were referred by the penal system in Europe

in 2016[14]. Moreover, 26% of cannabis users were referred to treatment by the penal system in Europe[14]. It is thought that the differences in the development level and judicial systems of countries may impact the varying rates of treatment application for SUD [14]. Mutlu et al. found that 83.6% of the SUD patients who participated in the study were from the city where the clinic was located, and the rate was similar in our study [15]. In our study, it was found that a small part of the DS group came from neighboring provinces, indicating that the DS processes can be carried out in neighboring provinces.

The majority of participants in our research were found to be men. In 2018, a survey on attitudes and behaviors toward tobacco, alcohol, and substance use in the general population in Turkey reported that 94% of the individuals who used substances at least once were men and 6% were women[16]. Although it has been suggested that differences by sex have decreased in recent years, an increase in substance use in women has been observed, and SUD is still more prevalent in men[17]. Previous studies suggested that men had more dominant role patterns, and women had more limited role pattern differences by sex[18]. Social and economic freedom, as well as easy access to substances in men, may be considered another important factor that affects substance use[19]. The mean age of the probation group was lower than that of the voluntary applicants, and most participants were <29 years old. Polat et al. found that 51.6% of the cases were between 15 and 29 years of age[20]. Our findings, the fact that people who use substances will most likely have judicial issues, suggest that the probation application enables individuals to apply to institutions for treatment at an earlier age.

The majority of study participants were found to be single. The fact that the applicants on probation were mostly ≤29 years old and were subject to judicial prosecution more frequently might affect the status of establishing close relationships, including marriage. The higher divorce rate in the volunteer group compared to the DS group suggests that substance use may lead to disruptions in family life in old age. Some previous studies reported that solitude was considered a risk factor in individuals who might resort to alcohol or substance use as a means of coping with loneliness[20,21,22]. The majority of the participants in our study were primary school graduates; according to the 2023 TUBİM report, 39.5% of the individuals graduated from primary school, and 1.7% had no education, which was indicative of the fact that the results of the present study were generally consistent with those reported for Turkey[6]. There was no difference between the probation and voluntary admission groups in terms of education level, suggesting that low education level has no effect on the way of applying for treatment for substance use[19,20,22,23].

In the study, it was found that employment history and income level were higher in the DS group. Turkish studies on Rize and Kocaeli provinces reported that 65%–73.4% of the groups that received treatment on probation had a history of employment[20,23]. The unemployment rate in the voluntary treatment group in Antalya and Konya provinces was 40%–47%[19,22]. The voluntary treatment group with a history of less employment received higher levels of social assistance compared to the probation group. Employment and social assistance levels in Turkey are closely related[24].

There is a well-established close correlation between the use of psychoactive substances and perpetration[25]. A meta-analysis of 61 studies conducted over the last 10 years concluded that there was a correlation between substance use and criminal behavior[25]. In our study, the high incidence of history of imprisonment in individuals with lower income levels is indicative of frequent legal issues arising associated with the attempts to obtain substances. In a systematic analysis of 30 studies, the likelihood of committing a crime was 3–4 times higher in patients who used substances compared to nonusers[26]. A literature review suggested that people with SUD had higher rates of criminal convictions, likelihood of imprisonment, and incidence of antisocial personality disorder, which increased criminal and illegal behavior in these individuals[27]. Considering that the majority of participants earn below minimum wage, substance use contributed to unemployment and forensic events consistent with previous studies[28]. The high rate of employment history in the probation group suggested that ensuring that people apply for treatment through judicial authorities might have positively contributed to the unemployment problem. Certain factors, including predisposition to crime, antisocial patterns, and poor family and professional life, are frequently observed in people with SUD[28]. The study data suggested that being subjected to probation owing to these factors does not affect the possibility of being imprisoned in the long term.

Based on the TUBIM 2023 report, 37.4% of the individuals were treated and followed up for opiate use, 37.8% for methamphetamine use, and 7% for cannabis use in 2022[6]. Our research found that opiate and cannabis use was common. Of the patients admitted to an addiction center in Ankara, 53.3%, 22.8%, 5.6%, and 14.6% used opiates, multiple substances, cannabis, and alcohol, respectively[19]. A Saudi Arabian study of 612 patients reported the rates of multiple substance, amphetamine, and alcohol use as 60%, 24%, and 9%, respectively[29]. Furthermore, a study conducted in 2019 in Gaziantep reported the rate of opiate, multiple substance, and methamphetamine use as 47.1%, 30.8%, and 13%, respectively, similar to the voluntary group in the present study[21]. After reviewing studies with patients who were admitted on probation in Turkey, cannabis was noted to be the most commonly used substance[20,30]. A striking result of the present study compared to previous studies is that methamphetamine use was more prevalent in patients admitted on probation. Furthermore, the prevalence of methamphetamine use increased from 25.6% in 2021 to 37.8% in 2022, according to the TUBIM 2023 report[6]. The Turkish Counter-Narcotics Presidency seized large quantities of methamphetamine in Turkey in recent years[6]. The fact that methamphetamine is available on the black market and more easily accessible compared to other substances may have increased the prevalence of its use. The study results suggested that the increased prevalence of methamphetamine use in Turkey was associated with an increase in the treatment upon probation as a judicial burden. The rate of alcohol use was 1.9%, which was lower compared to previous studies[19,31]. The fact that most of the previous studies included patients hospitalized in inpatient institutions suggested that sociocultural and economic differences affected the results.

The TUBIM 2023 report indicated that the average age at first substance use in patients who received inpatient treatment in 2022 was 22.2 years[6]. In a study conducted in Antalya, a similar age of first substance onset was found as in our study[22]. Based on the European Drug Report 2018, the average age at first substance use was 16 years for cannabis and 23 years for cocaine and opiates[32]. The age at first substance use was lower in Turkey compared to Europe[4]. Turkey's younger population, cosmopolitan city construct, location on migration routes in the drug trade, and economic income level are associated with an earlier age at first use.

SUDs are highly heritable, and studies on twins and adopted children support this high correlation in regard to genetic factors[33]. Previous studies from Turkey have reported a familial history of SUD ranging between 21.7% and 30.5%[19,22]. Certain factors, including a large sample size, regional differences, family structure, and cultural and economic status, might have caused the low rate of family history in the present study compared to previous studies. In our study, the history of AMATEM hospitalization was significantly higher in the volunteer group compared to the probation group. It was considered that the higher number of opiate users in the voluntary treatment group was associated with the fact that opiate withdrawal caused severe symptoms in patients and the fact that the buprenorphine–naloxone combination used in opiate treatment in Turkey could be applied to people.

After categorizing individuals based on the substance used, there were differences in clinical features. Turkish studies suggested that individuals who used alcohol were older compared to individuals who used other substances[19,31,34]. This may be because alcohol use is accepted in society and the fact that its negative effects occur at an older age[34]. When age groups were examined in our study, it was determined that patients using opiates were older than those using synthetic cannabis and methamphetamine. Similar to the study data, the TUBIM 2023 report indicated that methamphetamine use was more prevalent among younger individuals now compared to previous years[6]. In our study, opiate, methamphetamine, and multiple substance users had more adverse effects on their work life and sustained lower income levels. Evren et al. reported that the rate of unemployment was 60% in patients using opiates[34]. Given that opiate users previously used transitional substances, the addictive effect of opiates is high, and withdrawal symptoms are severe[35]. This can be considered an expected result when addiction develops, and they apply to clinics for treatment[35]. The cannabis group was more likely to be married, less likely to be divorced, more likely to be employed, more likely to earn minimum wage and above, less likely to receive social assistance, and less likely to be hospitalized. The fact that the sociocultural and social structure is less affected might have led to a decrease in the number of cannabis-related applications to institutions for treatment[19]. The present study is important in terms of suggesting that impairment in functioning and quality of life might vary by the type of addictive substance.

The relationship between the age of onset and the variables was examined in the first item. In our study, it was found that receiving postgraduate education delayed the age of substance use. This result is consistent with the reports of previous studies that a lower level of education was associated with a predisposition to substance use[13]. In our research, the age at first substance use was lower in people who were men, single, unemployed individuals, those who lived in urban areas, those not receiving social assistance, and those with family and prison histories. In a study of prisons in Turkey, at least one lifetime of substance use was associated with a decrease in the age at first offense[36]. It was also reported that substance use generally preceded criminal behavior[36]. In addition to genetic reasons, environmental factors (accessibility) can also affect the age at which the substance is first used[37]. For some individuals, the first offer of a substance comes from a family member or close relations[37]. A previous family history of substance use is an important risk factor for people to start using at an earlier age.

The limitations of the study included the fact that the study was based on self-reported data and designed as a short-term cross-sectional research. There was no information on the duration of the disease or any treatment data. Moreover, comorbid mental conditions and personality traits were not addressed since structured psychiatric evaluations could not be performed. However, the fact that the study included a relatively large sample of over 1000 people in one month and reflected Turkey's rates similar to the TUBIM 2023 data by age and sex suggested that the study could provide valid data for Turkey.

Alcohol and SUDs are increasingly emerging as major public health concerns. The present study was conducted in an AMATEM clinic in Adana province, and it is the first study of its kind in Turkey to compare voluntary and on-probation outpatient treatments. The study results suggested that SUD was a major concern affecting society in terms of various familial, social, occupational, and judicial factors. It is important to understand the sociodemographic and clinical characteristics of the participants for the implementation of protective measures for individuals with SUD. Treatment processes should be carried out keeping in mind that functional impairment may vary depending on the type of substance used and that the age of substance use is affected by various sociodemographic characteristics. Knowing the substance use characteristics that

determine prognosis will help in the treatment process. The study results can contribute to the comparative evaluation of the applications to all institutions providing addiction treatment in various regions of Türkiye. The present study can also contribute to the development of novel and different perspectives in the country-wide follow-up processes of addicts who apply for treatment voluntarily or are referred by judicial authorities.

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